

REMARKS

Claim 9 is amended. New claim 36 is added. Claims 9-10, 13 and 32-36 are pending in the application.

Claims 9, 13, and 32-33 stand rejected under 35 U.S.C. § 102 as being unpatentable over Cho, U.S. Patent No. 5,707,901. Each of claims 9-10, 13 and 32-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over various cited combinations of Cho; Ngo, U.S. Patent No. 6,420,752; Wu, U.S. Patent No. 5,915,182 (Wu '182); Wu, U.S. Patent No. 6,107,149 (Wu '149); Tsukamoto, U.S. Patent No. 5,700,349 and Ju, U.S. Patent No. 6,232,166. The Examiner is reminded by direction to MPEP § 2131 that anticipation requires each and every element of a claim to be disclosed in a single prior art reference. The Examiner is further reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Each of claims 9-10, 13 and 32-35 are allowable over Cho individually and over the various cited combinations of Cho, Ngo, Tsukamoto, Ju, Wu '182 and Wu '149 for at least the reason that the references, individually or as combined, fail to disclose or suggest each and every element in any of those claims.

As amended, independent claim 9 recites etching a contact opening through a doped oxide and through a barrier layer adjacent a spacer utilizing the spacer to align the contact opening, the etch exposing at least a portion of the spacer. Claim 9 further recites that the spacer is formed by depositing and anisotropically etching a first layer comprising Al_pO_q and a second layer consisting essentially of silicon and nitrogen. The amendment to

claim 9 is supported by the specification at, for example, Fig. 5 and the text at page 11, line 21 through page 12, line 16. Cho discloses formation of an aluminum comprising dielectric layer 25 and formation of a dielectric layer comprising silicon followed by etching to form spacers 26 (Fig. 2 and the text at col. 2, ll. 9-35). Cho further discloses forming a dielectric layer 34 comprising aluminum and a doped silicon dioxide material over the spacers and forming a via 36 through the doped silicon oxide and aluminum comprising layer 34 (Fig. 4 and the text at col. 2, ll. 66 through col. 3, ll. 10). Cho does not disclose or suggest the claim 9 recited etching a contact opening utilizing a spacer to align the contact opening or the recited exposing at least a portion of the spacer during the etching of the contact opening.

As indicated at page 4 of the present Action, Ngo is relied upon as teaching a dopant barrier layer comprising silicon dioxide. Ngo does not disclose or suggest the claim 9 recited etching a contact opening through doped oxide and through a barrier layer utilizing an aluminum comprising spacer to align the contact opening. As combined with Cho, Ngo does not contribute toward suggesting the claim 9 recited etching a contact opening through a doped oxide and through a barrier layer adjacent a spacer, or the recited utilizing the spacer to align the contact opening.

Not one of Wu '182, Tsukamoto, Wu '149, or Ju discloses or even contributes toward suggesting the claim 9 recited etching a contact opening through a doped oxide and through a barrier layer adjacent a spacer utilizing the spacer to align the contact opening where the spacer comprises a layer of Al_pO_q and a layer consisting essentially of silicon and nitrogen, the etching exposing at least a portion of the spacer. Accordingly, independent claim 9 is not rendered obvious by the various cited combinations of Cho,

Ngo, Wu '149, Wu '182, Ju and Tsukamoto and is allowable over these references.

Claims 10, 13 and 32-35 are allowable over the various cited combinations of Cho, Ngo, Ju, Wu '149, Wu '182 and Tsukamoto for at least the reason that they depend from allowable base claim 9.

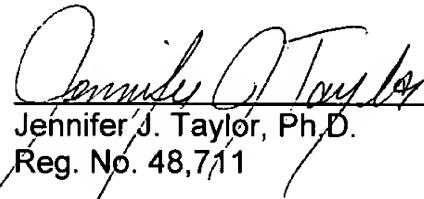
Added claim 36 does not add "new matter" to the application since the claim is fully supported by the specification as filed. Claim 36 is supported by the specification at, for example, Fig. 5 and the text at page 12, line 17 through page 13, line 2.

For the reasons discussed above claims 9-10, 13 and 32-35 are allowable and claim 36 is believed allowable. Accordingly, applicant respectfully requests formal allowance of pending claims 9-10, 13 and 32-36 in the Examiner's next action.

Respectfully submitted,

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